

OCCUPATIONAL HEALTH HAZARDS AMONG NURSES: ASSESSING KNOWLEDGE, ATTITUDES, AND PRACTICES IN SOUTHERN PUNJAB, PAKISTAN

Abrab Ahmad^{*1}, Hina Arshad², Muntaha Saman³, Muqadas Naveed⁴,
Nida Shafiq⁵, Muhammad Bilal Hussain⁶, Muhammad Danish⁷

^{*1,3,4,5,7}Department of Nursing, Shahida Islam Medical Complex, Bahawalpur Road, 100M Lodhran,
Punjab, Pakistan

²Department of Nursing, Nishtar Medical University and Hospital, Multan, Pakistan

⁶Department of Nursing, Fatima Memorial Hospital Lahore, Punjab, Pakistan

¹abrahamad232233@gmail.com, ²h49798134@gmail.com, ³munthasaman5@gmail.com,
⁴muqadasnaveed33@gmail.com, ⁵nshafiq963@gmail.com, ⁶hussainmuhammadbilal100@gmail.com,
⁷hmdanishaltaf2000@gmail.com

Corresponding Author: *

Abrab Ahmad

DOI: <https://doi.org/10.5281/zenodo.18113202>

Received
02 November 2025

Accepted
16 December 2025

Published
31 December 2025

ABSTRACT

Background: Nurses are frequently exposed to various occupational health hazards, including physical, biological, chemical, ergonomic, and psychosocial risks. These hazards can compromise nurses' health, reduce productivity, and affect patient safety. In Pakistan, limited research exists assessing nurses' knowledge, attitudes, and practices (KAP) regarding occupational health hazards in tertiary hospitals.

Objective: This study aimed to evaluate the level of knowledge, attitudes, and practices of nurses regarding occupational health hazards in Shahida Islam Teaching Hospital and Bahawal Victoria Hospital, Pakistan, and to identify gaps that may inform institutional interventions.

Methods: A cross-sectional descriptive design was employed. A total of 80 nurses were selected using a convenience sampling technique. Data were collected via a structured questionnaire assessing demographic characteristics and KAP regarding occupational health hazards. Data were analyzed using descriptive statistics and chi-square tests to examine associations between gender and KAP.

Results: Among participants, 71.5% demonstrated good knowledge, 87.1% had positive attitudes, and 79.7% exhibited appropriate practices regarding occupational health hazards. A subset of nurses showed uncertainty or insufficient knowledge and practice. Chi-square analysis indicated no statistically significant association between gender and KAP. Findings highlight that while most nurses possess satisfactory awareness and attitudes, gaps remain in practical application and adherence to safety protocols.

Conclusion: Nurses in the two tertiary hospitals generally display good knowledge, positive attitudes, and appropriate practices toward occupational health hazards, consistent with national and international literature. Nevertheless, continuous training, practical reinforcement, and institutional support are necessary to strengthen occupational health safety and promote nurse well-being.

Keywords: Occupational health hazards, nurses, knowledge, attitude, practice, hospital safety, Pakistan.

1. INTRODUCTION

1.1 Introduction of the Topic and Research Problem

1.1.1 Background of the Study

Occupational health hazards are a significant concern for nurses worldwide, as they are constantly exposed to various physical, chemical, biological, ergonomic, and psychosocial risks in their daily practice. Continuous exposure to such hazards can lead to serious health problems, reduced productivity, and compromised patient safety (1,2). Nurses in hospitals often handle infectious materials, sharp instruments, and hazardous chemicals, which put them at a higher risk of injuries, infections, and chronic illnesses (4). In Pakistan, where healthcare systems are already strained by limited resources, occupational health and safety protocols are often under-implemented or inadequately monitored. Studies have highlighted that nurses working in tertiary hospitals face an increased risk of needle-stick injuries, back pain, burnout, and psychological stress due to high workloads and lack of training in preventive measures (21,22). The awareness, attitudes, and practices of nurses play a critical role in minimizing exposure to occupational hazards and ensuring adherence to safety guidelines (20,16).

Globally, research indicates that when nurses possess strong knowledge and a positive attitude toward occupational safety, the likelihood of injuries and infections decreases substantially (8,13). However, in developing countries such as Pakistan, lack of safety training, poor reporting systems, and limited administrative support continue to hinder the implementation of effective occupational health measures (25). Thus, exploring the knowledge, attitude, and practices (KAP) of nurses regarding occupational health hazards is essential to identify existing gaps and design interventions for improving workplace safety and health outcomes.

This study focuses on nurses working in Shahida Islam Teaching Hospital and Bahawal Victoria Hospital, two major tertiary care institutions in Southern Punjab, Pakistan. These hospitals represent diverse healthcare settings where nurses encounter a wide range of occupational risks. Assessing their KAP levels will help highlight the areas requiring institutional support and professional development to enhance nurse well-being and patient care.

1.1.2 Problem Statement

Although occupational health hazards among nurses are well-documented globally, limited research has been conducted in Pakistan to assess nurses' knowledge, attitude, and practices regarding workplace safety. Most existing studies have focused on isolated hazards, such as needle-stick injuries or infection control, rather than a comprehensive assessment of multiple occupational risks (2,21). Moreover, there is a lack of comparative evidence between hospitals in the same region, particularly in Southern Punjab.

This knowledge gap limits policymakers' ability to design hospital-wide safety protocols and educational programs tailored to nurses' needs. Therefore, this study aims to evaluate and compare the knowledge, attitude, and practices of nurses regarding occupational health hazards in Shahida Islam Teaching Hospital and Bahawal Victoria Hospital, Pakistan, to identify key risk areas and inform evidence-based interventions.

1.2 Current State of Knowledge, Gaps, and Contradictions

1.2.1 Summary of Existing Knowledge

Numerous studies emphasize the importance of occupational safety awareness among healthcare workers. Mersal et al. (1) highlighted that adequate safety measures and managerial support significantly reduce occupational risks among nurses in government hospitals. Similarly, Alenezi (16) and Saleem et al. (2) reported that higher knowledge and consistent use of personal protective equipment (PPE) are directly linked to fewer needle-stick and sharp injuries.

In Pakistan, Sattar et al. (21) explored infection control practices among ICU nurses and found variations in compliance due to workload and insufficient training. Din et al. (20) further observed that gaps in safe medication practices among nurses reflected limited institutional emphasis on occupational safety training. Internationally, Asfour et al. (8) and Rodríguez-Muñoz et al. (13) noted that educational programs, ergonomic adjustments, and stress reduction initiatives improved both well-being and workplace safety among nurses.

However, despite growing awareness, occupational hazards remain prevalent due to inconsistent adherence to safety protocols, lack of institutional accountability, and insufficient safety infrastructure (22,6). Studies have also linked

excessive workload, emotional exhaustion, and environmental factors such as air pollution to reduced occupational health outcomes (25,15).

1.2.2 Research Gap

While previous studies have investigated individual aspects such as infection control, medication safety, and burnout among nurses, comprehensive research integrating knowledge, attitude, and practice toward overall occupational health hazards in Pakistani hospitals remains limited. In particular, there is a scarcity of comparative research across multiple tertiary hospitals in South Punjab that assesses nurses' understanding and implementation of safety measures (21,22).

This study addresses this gap by evaluating nurses' KAP regarding occupational health hazards in Shahida Islam Teaching Hospital and Bahawal Victoria Hospital. The results aim to inform policymakers, hospital administrators, and educators in designing training and policy frameworks to strengthen occupational health and safety practices.

1.3 Rationale of the Study

1.3.1 Basis and Justification

Nurses are at the frontline of patient care, making them more vulnerable to occupational health risks. Understanding their knowledge, attitude, and practices regarding these hazards is crucial for developing targeted interventions that protect their well-being and improve the quality of care. The findings from this study will contribute to enhancing workplace safety, reducing injury rates, and promoting a healthier work environment in tertiary hospitals (1,4).

1.3.2 Theoretical Relevance

This study is grounded in the Knowledge, Attitude, and Practice (KAP) theoretical model, which assumes that increasing awareness and positive attitudes lead to safer practices. By evaluating nurses' KAP, this research provides insights into behavioral change mechanisms essential for improving occupational safety. The study also aligns with occupational health and safety frameworks emphasizing prevention through education, awareness, and system-level interventions (14,13).

1.3.3 Practical Significance

Practically, this research will provide valuable data for hospital administrators and policymakers to strengthen occupational health policies, conduct safety training, and allocate protective resources effectively. Improved nurse safety will lead to reduced absenteeism, higher job satisfaction, and enhanced patient care quality (20,22). Furthermore, this study's outcomes can serve as a foundation for establishing occupational health units and monitoring systems within hospitals.

1.4 Research Question

- i. What is the level of knowledge, attitude, and practice among nurses regarding occupational health hazards in Shahida Islam Teaching Hospital and Bahawal Victoria Hospital, Pakistan?

1.5 Research Objectives

- i. To assess the level of knowledge among nurses regarding occupational health hazards.
- ii. To determine nurses' attitudes toward workplace health and safety measures.
- iii. To evaluate the practices of nurses in preventing occupational health hazards.
- iv. To identify gaps and suggest strategies for improving occupational health safety in hospitals.

2. LITERATURE REVIEW

2.1 Current State of Knowledge

Occupational health hazards among nurses have become a growing concern worldwide due to the high prevalence of exposure to infectious materials, chemical substances, and physical or psychological stressors. Nurses, being in continuous contact with patients and medical equipment, face a variety of occupational risks that may lead to physical injuries, infections, or emotional exhaustion [1]. Globally, research indicates that when nurses possess strong knowledge and a positive attitude toward occupational safety, the likelihood of injuries and infections decreases substantially [8,13]. However, in developing countries such as Pakistan, lack of safety training, poor reporting systems, and limited administrative support continue to hinder the implementation of effective occupational health measures [25].

Studies conducted in tertiary hospitals have shown that inadequate safety training and inconsistent compliance with infection control protocols contribute significantly to occupational risks. Saleem et al. [2] found that healthcare workers in

operating theatres lacked adequate knowledge and adherence to safe practices regarding needle-stick and sharp injuries. Similarly, Ullah and Ud-din [4] reported that although nurses in public sector hospitals demonstrated awareness of medication safety protocols, their practical application of preventive measures was often insufficient. Internationally, Alenezi [16] observed that consistent training and awareness programs significantly improve compliance with needle-stick and sharps injury prevention guidelines. In Pakistan, Mersal et al. [1] highlighted that hospitals with effective occupational health systems and managerial supervision recorded fewer workplace injuries among nursing staff.

2.2 Occupational Stress, Mental Health, and Work Environment

Occupational stress and poor mental health are recognized as critical workplace hazards that negatively influence performance and safety outcomes. Majeed et al. [22] found that nurses working in high-stress hospital units experienced burnout, emotional exhaustion, and job dissatisfaction due to heavy workloads and prolonged duty hours. Globally, interventions focusing on stress regulation, resilience, and well-being have been proven to improve the psychological health of healthcare professionals [9]. Similarly, Rodríguez-Muñoz et al. [13] demonstrated that structured workplace sleep programs enhanced nurses' alertness and overall well-being, reducing fatigue-related errors.

Crisan et al. [14] emphasized that workplace mental health can be improved through community and institutional co-ownership strategies, which strengthen organizational culture and staff retention. In the Pakistani context, Fatima et al. [23] observed that barriers to mental health awareness and lack of institutional psychological support significantly increased stress and burnout among healthcare professionals. These studies collectively suggest that occupational stress and mental health challenges among nurses must be addressed as part of a comprehensive occupational health and safety framework.

2.3 Infection Control and Biological Hazards

Exposure to infectious agents remains one of the most serious occupational risks for nurses. Sattar et al. [21] explored infection control practices

among intensive care unit (ICU) nurses across Punjab and found inconsistencies in the use of personal protective equipment (PPE) and poor adherence to standard precautions. Similarly, Din et al. [20] reported that gaps in medication safety practices exposed nurses to contamination and increased the risk of occupational exposure.

Globally, studies have shown that implementing strict infection prevention protocols, vaccination programs, and continuous professional education significantly reduce occupational infections [16,10]. In Pakistan, Ali et al. [19] examined the prevalence of hepatitis B and C among healthcare workers and highlighted the importance of vaccination, routine screening, and adherence to safety measures. Saleem et al. [2] also emphasized the need for effective hospital policies to prevent needle-stick injuries and improve the safety culture among staff. Overall, infection control remains a cornerstone of occupational health and requires ongoing monitoring and training initiatives to protect both nurses and patients.

2.4 Environmental and Physical Health Hazards

Apart from infectious risks, nurses are exposed to environmental and ergonomic hazards that can affect respiratory, ocular, and musculoskeletal health. Hassan et al. [25] demonstrated that exposure to smog and poor air quality adversely impacts respiratory and ocular health among hospital workers, while Subhanullah et al. [15] highlighted that particulate matter concentrations in Pakistani cities have a direct effect on occupational health outcomes.

Globally, excessive fatigue and poor sleep have also been identified as key occupational health challenges. Gu et al. [6] conducted a meta-analysis showing that excessive daytime sleepiness among nurses leads to decreased alertness and increased workplace accidents. Similarly, Rodríguez-Muñoz et al. [13] found that implementing structured sleep programs improved well-being and reduced fatigue-related errors among healthcare staff. In Pakistan, Majeed et al. [22] linked high workload and inadequate rest to burnout and poor job satisfaction. These studies collectively underscore that addressing environmental, ergonomic, and psychosocial risks is essential for promoting nurse safety and sustaining hospital productivity.

2.5 Gaps and Contradictions in Existing Literature

Despite growing awareness, inconsistencies remain regarding the relationship between nurses' knowledge, attitude, and practice in managing occupational health hazards. Mersal et al. [1] and Ullah and Ud-din [4] found that while nurses had adequate theoretical knowledge, their practical compliance was limited by heavy workloads, lack of supervision, and insufficient resources. Similarly, Saleem et al. [2] identified a clear gap between awareness and practice regarding the prevention of needle-stick injuries.

Internationally, studies have confirmed that continuous education and reinforcement improve compliance with occupational safety standards [8,16]. However, research conducted in Pakistan indicates that safety training programs are often irregular or lack institutional follow-up [21,20]. Furthermore, occupational safety research in Pakistan has largely focused on biological hazards, with limited attention to psychological and environmental risks that also affect nurse performance and safety [22,23]. Therefore, a comprehensive, multi-dimensional assessment of occupational health practices among nurses in Pakistan remains necessary.

2.6 Rationale for the Current Study

The reviewed literature collectively reveals that occupational health hazards among nurses are multifaceted and influenced by knowledge, attitudes, and behavioral practices. Although international research has emphasized the importance of training and awareness, limited evidence exists from Pakistan that evaluates all aspects of occupational health comprehensively. Most studies have been single-institution analyses focused on specific hazards rather than broad evaluations across multiple hospital settings [21,20].

This study, therefore, seeks to bridge this gap by assessing the knowledge, attitude, and practices of nurses regarding occupational health hazards in Shahida Islam Teaching Hospital and Bahawal Victoria Hospital, Pakistan. Findings will provide insights into the current state of workplace safety awareness and inform targeted interventions for policy development and staff training. By identifying existing weaknesses and opportunities for improvement, this study aims to contribute to

safer hospital environments and improved nurse well-being [1,13,25].

3. METHODOLOGY

This study employed a cross-sectional descriptive research design to assess the knowledge, attitude, and practices of nurses regarding occupational health hazards in two tertiary care hospitals: Shahida Islam Teaching Hospital, Lodhran (private sector), and Bahawal Victoria Hospital, Bahawalpur (public sector). The research population comprised registered nurses, including Charge Nurses, Head Nurses, Generic BSN, and Post-RN nurses. The sample size was 80 Participants by using Cochran Formula. A convenience sampling technique was utilized to select participants who were willing and available to participate. This non-probability sampling method was chosen for its practicality, cost-effectiveness, and time efficiency. Data were collected through a structured questionnaire designed to capture demographic information and assess the nurses' level of knowledge, attitude, and practices regarding occupational health hazards. The questionnaire was distributed among the 80 participants, ensuring that all responses were complete. Data collection took place across both study sites, with 100% response achieved from the targeted hospitals. The collected data were analyzed using SPSS version 21.0. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize demographic characteristics and participants' responses regarding knowledge, attitude, and practice (KAP) of palliative care. To examine the association between categorical variables such as gender and KAP scores, Chi-square tests were applied. A p-value < 0.05 was considered statistically significant. For all analyses, responses were categorized as appropriate to the Likert scale used in the questionnaire. Ethical considerations were strictly maintained throughout the research process. Participants were informed about the purpose of the study, and written informed consent was obtained prior to data collection. Confidentiality and anonymity were assured, and participants were informed that their participation was voluntary, with the right to withdraw at any stage without any consequences. There were no known risks associated with the study, and participants were not deceived in any way. The research was conducted over a period of

six months, from October 10, 2024, to March 10, 2025. The study aimed to provide valuable insights into the occupational health challenges faced by nurses and to support future safety interventions and policy development in both public and private healthcare institutions.

4. RESULTS

4.1 Demographics

Table 4.1: Demographic Characteristics of Participants

Demographic Variable	Frequency	Percentage
Gender		
Male	5	6.3
Female	75	93.8
Age		
20–25	15	18.8
26–30	28	35.0
31–35	11	13.8
36+	26	32.5
Designation		
RN	78	97.5
HN	2	2.5
Total	80	100

The study included 80 nurses from Shahida Islam Teaching Hospital, Lodhran (private), and Bahawal Victoria Hospital, Bahawalpur (government). The majority were female (75; 93.8%) and 5 (6.3%) were male. Age distribution was as follows: 20–25 years (15; 18.8%), 26–30 years (28; 35%), 31–35 years (11; 13.8%), and 36+ years (26; 32.5%). Most participants were registered nurses (78; 97.5%), with only 2 (2.5%) serving as head nurses (Table 4.1).

4.2 Knowledge Assessment

Knowledge regarding occupational health hazards was assessed among participants. Findings revealed that 57 nurses (71.5%) demonstrated **good knowledge**, 13 (16.5%) were **confused or unsure**, and 10 (12%) had **insufficient knowledge** (Table 4.2).

Table 4.2: Overall Knowledge of Nurses

Knowledge Level	Frequency	Percentage	Cumulative Percentage
Good Knowledge	57	71.5	71.5
Confused / Not Sure	13	16.5	88.0
No Knowledge	10	12.0	100
Total	80	100	100

4.3 Attitude Assessment

The overall attitude of nurses toward occupational health hazards was positive. A total of 70 participants (87.1%) demonstrated **good attitudes**, 7 (8.9%) were **unsure**, and 3 (3.9%) exhibited **poor attitudes** (Table 4.3).

Table 4.3: Overall Attitude of Nurses

Attitude Level	Frequency	Percentage	Cumulative Percentage
Good Attitude	70	87.1	87.1
Confused / Not Sure	7	8.9	96.0
Poor Attitude	3	3.9	100
Total	80	100	100

4.4 Practice Assessment

Regarding occupational health practices, 64 nurses (79.7%) demonstrated **good practice**, 11 (14.1%) were **unsure**, and 5 (6.3%) had **poor practice** (Table 4.4).

Table 4.4: Overall Practice of Nurses

Practice Level	Frequency	Percentage	Cumulative Percentage
Good Practice	64	79.7	79.7
Confused / Not Sure	11	14.1	93.8
Poor Practice	5	6.3	100
Total	80	100	100

4.5 Association Between Gender and KAP

Chi-square tests were conducted to examine the association between gender and nurses' knowledge, attitude, and practice regarding occupational health hazards.

Knowledge: The Pearson chi-square value was 3.200 (df = 2, p = 0.202), indicating a statistically non-significant association between gender and knowledge (Table 4.5).

Table 4.5.1: Chi-Square Test for Knowledge vs. Gender

Test	Value	df	p-value
Pearson Chi-Square	3.200	2	0.202
Likelihood Ratio	4.898	2	0.086
Linear-by-Linear Association	2.702	1	0.100

Attitude: Pearson chi-square value was 0.593 (df = 2, p = 0.744), showing no significant association between gender and attitude (Table 4.6).

Table 4.5.2: Chi-Square Test for Attitude vs. Gender

Test	Value	df	p-value
Pearson Chi-Square	0.593	2	0.744
Likelihood Ratio	1.090	2	0.580
Linear-by-Linear Association	0.534	1	0.465

Practice: Pearson chi-square value was 0.553 (df = 2, p = 0.759), indicating no significant association between gender and practice (Table 4.7).

Table 4.5.3: Chi-Square Test for Practice vs. Gender

Test	Value	df	p-value
Pearson Chi-Square	0.553	2	0.759
Likelihood Ratio	0.909	2	0.635

Test	Value	df	p-value
Linear-by-Linear Association	0.114	1	0.736

These results indicate that **gender does not significantly influence nurses' knowledge, attitude, or practice** regarding occupational health hazards.

4.6 Answer to Research Question and Objectives

The majority of nurses demonstrated **good knowledge (71.5%), positive attitudes (87.1%), and appropriate practices (79.7%)** regarding occupational health hazards. While overall performance was satisfactory, a subset of nurses exhibited uncertainty or inadequate knowledge and practice, highlighting the need for **continuous training, reinforcement of safety protocols, and institutional support** to further enhance occupational health outcomes.

4.7 Summary of Findings

- The **demographic profile** indicated a predominantly female workforce, with the majority aged 26–30 years and mostly registered nurses.
- Knowledge:** Most nurses were well-informed about occupational health hazards, though 28.5% showed uncertainty or insufficient knowledge.
- Attitude:** A highly positive attitude was observed among nurses, suggesting awareness of the importance of safety measures.
- Practice:** Good occupational practices were prevalent, though a small group still required guidance.
- Gender Association:** No statistically significant differences were observed between male and female nurses regarding knowledge, attitude, or practice.

The results collectively highlight that while nurses demonstrate satisfactory KAP levels, there remain gaps in knowledge and practice that warrant targeted interventions, training, and policy reinforcement.

5. DISCUSSION

This study evaluated the knowledge, attitude, and practice (KAP) of nurses regarding occupational health hazards at Shahida Islam Teaching Hospital and Bahawal Victoria Hospital, Pakistan. The results indicate that the majority of nurses possessed good knowledge (71.5%), positive attitudes (87.1%), and appropriate practices

(79.7%) regarding occupational health hazards. These findings provide an important overview of occupational safety awareness among nurses in Pakistan.

5.1 Knowledge of Occupational Health Hazards

Most nurses had good knowledge regarding occupational hazards, consistent with findings by Mersal et al. [1], who reported substantial awareness among nurses in government hospitals with appropriate training and managerial support. Similarly, Saleem et al. [2] observed that operating theatre staff had reasonable awareness of needle-stick injury prevention, although adherence remained inconsistent. Alenezi [16] also emphasized that continuous education improves healthcare workers' KAP.

However, 28.5% of nurses were either unsure or had inadequate knowledge, similar to findings by Ullah and Ud-din [4], who noted gaps between theoretical understanding and practical compliance due to workload and limited resources.

5.2 Attitude Toward Occupational Health Hazards

Positive attitudes were observed among most participants (87.1%), aligning with studies that indicate awareness and organizational culture influence nurses' attitudes toward occupational safety [8,1,20]. Nevertheless, a small proportion of nurses were uncertain or exhibited poor attitudes, consistent with Saleem et al. [2], highlighting the influence of workload and lack of supervision. Reinforcement through regular training and mentorship is critical for sustaining positive attitudes.

5.3 Practice Regarding Occupational Health Hazards

Most nurses (79.7%) demonstrated appropriate practices, in line with Din et al. [20], who reported improved adherence to safe medication administration protocols when supported by hospital policies. Mersal et al. [1] similarly observed that hospitals with structured occupational health systems recorded fewer workplace injuries.

Despite these positive results, 20.3% of nurses lacked adequate practice or were unsure, reflecting

gaps noted by Saleem et al. [2] and Ullah and Uddin [4]. This indicates the need for practical workshops, routine monitoring, and reinforcement of safety protocols.

5.4 Gender and Occupational Health KAP

Chi-square analysis showed no significant association between gender and knowledge, attitude, or practice, suggesting that occupational health awareness is independent of gender. These findings are consistent with Mersal et al. [1] and Saleem et al. [2], which highlighted institutional support and training as more influential than demographic variables.

5.5 Comparison with International Literature

International literature supports these findings. Structured training improves compliance with occupational safety standards [16,8]. Moreover, stress management and sleep programs enhance nurses' alertness and performance in high-pressure environments [13,9,6]. Although this study did not directly evaluate stress or sleep interventions, implementing similar programs in Pakistan may improve occupational health outcomes.

5.6 Gaps and Implications

Despite generally high KAP levels, practical adherence and uncertainty among some nurses remain issues, consistent with studies in Pakistan [4,2,21]. Recommendations include:

- i. Continuous education programs to reinforce knowledge and skills.
- ii. Regular monitoring and audits to ensure compliance with safety protocols.
- iii. Supportive institutional policies and managerial supervision to encourage best practices.
- iv. Stress management and well-being programs to enhance performance [13,9].

Addressing these gaps can reduce occupational hazards and promote a healthier work environment.

5.7 Conclusion of Discussion

Nurses in Shahida Islam Teaching Hospital and Bahawal Victoria Hospital demonstrated good knowledge, positive attitudes, and generally appropriate practices regarding occupational health hazards. These findings are consistent with both national and international literature. Nonetheless, targeted interventions, ongoing training, and institutional support are needed to

further improve occupational safety and nurse well-being.

6. REFERENCES

1. Mersal FA, Alenezi IN, Ali RA, Alanazi FK. Occupational Health Hazards and Control Measures in Government Hospitals: A Cross-Sectional Survey of Nurses' and Nurse Managers' Perspectives. *Journal of Nursing Management*. 2025;2025(1):6657959.
2. Saleem MU, Ali HA, Jahangir A, Latif MT. ASSESSING THE KNOWLEDGE ATTITUDE, PRACTICE AND CLINICAL SCREENING ABOUT NEEDLE STICK INJURY IN OPERATION THEATRE WORKERS AT TERTIARY CARE HOSPITAL.
3. Gohar F, Nawaz S, Haider A, Inayat R, Gulzar M, Sadiq R, Alam M, Khatoon K. ASSESS THE KNOWLEDGE AND ATTITUDE OF PREGNANT WOMEN ABOUT RISK FACTORS DURING PREGNANCY IN LAKHODAIR COMMUNITY HEALTH CENTER. *Journal of Medical & Health Sciences Review*. 2025 Apr 12;2(2).
4. Ullah M, Uddin Y. KNOWLEDGE ATTITUDE AND PRACTICE REGARDING MEDICATION ADMINISTRATION RIGHTS AMONG NURSES WORKING IN PUBLIC SECTOR HOSPITALS OF SWAT PAKISTAN. *Frontier in Medical and Health Research*. 2025 Jul 25;3(5):1215-56.
5. Sadiq R, Alam M, Younis M, Saad M, Yousaf HF, Khushi N, Haider A, Ayub FG, Nawaz S, Khatoon K. UNDERSTANDING TUBERCULOSIS THROUGH A SOCIOCULTURAL LENS: A STUDY AMONG RURAL RESIDENTS OF LAKHODAIR, LAHORE (PAKISTAN). *Journal of Medical & Health Sciences Review*. 2025 May 14;2(2).
6. Gu K, Chen H, Shi H, Hua C. Global prevalence of excessive daytime sleepiness among nurses: A systematic review and meta-analysis. *International nursing review*. 2025 Mar;72(1):e13087.
7. Inukonda S, Boyd-Barrett O, Lengel LM. Propaganda, Communication and Empire.

8. Asfour, H.I., Ramaiah, P., Nomani, I., Abbakr, I.A. and Ahmed, E.E., 2025. Safety of undergraduate nursing students during their clinical education: A review of the literature. *Journal of Neonatal Surgery*, 14(15s).
9. Pozzato I, Parker M, Tate R, Arora M, Bourke J, Ahmadi M, Gillett M, McBain C, Tran Y, Arora V, Schoffl J. A Wearable-Based Program to Optimise Stress Regulation, Resilience, and Wellbeing in Emergency Care Settings: A Proof-of-Concept Study Protocol. *Sensors*. 2025 Dec 23;26(1):104.
10. Peniston S, Sivaramakrishnan D, McSweeney C, Holloway A. Undiagnosed and uncontrolled hypertension in rural African adults: a scoping review of primary health care interventions and development of the CO-HEART framework. *Global public health*. 2025 Dec 31;20(1):2579687.
11. Ahmad MH. *Understanding the role of personality, culture, and motives: Conceptualising an evidence-based framework for an effective intergenerational program* (Doctoral dissertation, Australian Catholic University).
12. Palacz-Poborczyk I, Chamberlain K, Naughton F, Baska A, Luszczynska A, Quested E, Hagger MS, Pagoto S, Verboon P, Robinson S, Kwasnicka D. 'A healthy lifestyle is a journey': exploring health perceptions and self-defined facilitators to health through photo-elicitation. *Psychology & health*. 2025 Apr 3;40(4):652-80.
13. Rodríguez-Muñoz A, Antino M, Díaz-Guerra A, Paez GS. The Impact of a Workplace Sleep Program on Employee Well-being: A Pre-post Design Intervention Study. *Journal of Work and Organizational Psychology*. 2025 Aug 8;41(2):85-92.
14. Crisan C, Van Dijk P, Oxley J, De Silva A. Activating community co-ownership of work-related mental health: Enhancing capacity to reach at-risk groups. *Australian Journal of Public Administration*. 2025 Sep 30.
15. Subhanullah M, Hassan N, Rahman G, Rawan B, Ullah W, Ilyas M. Concentration of particulate matter and its impact on public health in different cities in Pakistan-a review. *Environmental Forensics*. 2025 Mar 4;26(2):146-62.
16. Alenezi MS. *Knowledge, Attitude, and Practice (KAP) of Healthcare Workers Toward Needle Stick and Sharps Injury (NSSI) in a Tertiary Hospital in Saudi Arabia* (Master's thesis, Alfaisal University (Saudi Arabia)).
17. Willis MD, Cesare N, Harleman M, Black-Ingersoll F, Gradus JL, Thombs R, Oblath R, Buonocore JJ, Welch BM, Casey JA, Braun D. Impact of boom-and-bust economies from oil and gas development on psychiatric hospitalizations among Medicaid beneficiaries. *Environmental Research: Health*. 2025 Sep 17;3(3):035008.
18. Dionisio DN, Torres RA. Reducing pain into a tablet substantiating and numbing race-based mental health during the COVID-19 pandemic. *Journal of Ethnicity in Substance Abuse*. 2025 Aug 19:1-25.
19. Ali R, Saleem M, Rehman A, Latif MT, Khalid F. FREQUENCY OF HEPATITIS B AND C AMONGST THE GENERAL POPULATION OF RURAL AND URBAN AREAS OF LAHORE PAKISTAN. *Frontier in Medical and Health Research*. 2025 Jul 9;3(5):390-416.
20. Din, S.S., Bhullar, M., Fatima, A., Fatima, A. and Danish, M., 2025. Nurses' Knowledge and Practices Regarding Safe Medication Administration at The Children's Hospital, Lahore. *Journal of Health, Wellness and Community Research*, pp.e995-e995.
21. Sattar A, Tehreem SY, Batool F, Danish M. The Infection Control Paradox: Exploring Knowledge and Practices of ICU Nurses Across Hospitals in Punjab, Pakistan.
22. Majeed R, Fatima A, Andleeb H, Fatima A, Danish M, Ahmad Z, Jamal F. Assessment of Burnout and Job Satisfaction among Nurses Working in High-Stress Units of Tertiary Hospitals of Bahawalpur. *Indus Journal of BioscienceResearch*. 2025 Apr 30;3(4):669-76.
23. Fatima A, Shoukat M, Andleeb H, Javaid I, Danish M, Jamal F. Barriers to Mental Health Awareness and Service Access Among Youth in Southern Punjab: A Cross-Sectional Study. *AIJSS [Internet]*. 2025 Jul. 11 [cited 2025 Nov. 25];4(3):651-69. Available from: <https://academia.edu.pk/index.php/Journals/article/view/403>

24. Younis Z, Nissa R, Danish M, Ali A. ASSESSMENT OF MOTHER'S KNOWLEDGE, ATTITUDE AND PRACTICES REGARDING CHILDHOOD VACCINATION DURING THE FIRST FIVE YEARS OF LIFE.
25. Hassan MM, Javaid I, Jamal F, Ameerq M, Danish M, Kargbo A, Javed A. Multidimensional Impact of Smog on Respiratory and Ocular Health: A Cross-Sectional Study With Socio-Psychological and Public Health Prospective. Health Science Reports. 2025 Sep;8(9):e7120

